

Work Order ID 53278

October 30, 2009 1:50:10 PM



Page 1

Item ID: D206-667-103BL

Accept



Setup Start



Revision ID:

Stop



Item Name: Crosstube Fwd, Blue

Start Date: 29/10/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 09/11/2009 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: *PP*

Date: 07-10-30 Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

100



DOCUMENT CONTROL

0.00

DC

Memo

0.00

Document Control

Photocopy bluefile and create labels as per PPP D206-667-103 CHG004

2

110



Packaging

0.00

Packaging

Memo

0.00

Packaging

(X)

Q

MB 09-11-16

120



BENDING MACHINE - CROSSTUBES

0.00

CNC Bend 2

Memo

0.00

CNC Alpha 160 Bender

Bend tube as per Dwg D206-667-143 using CNC bender program

(X)

Q

MB 09-11-16

Work Order ID 53278

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Item ID: D206-667-103BL

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Start Date: 29/10/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 09/11/2009 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

130

QC15- Crosstube Dimensional Check

0.00

⇒ 809/11/16



QC

Memo

0.00

Quality Control



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Customer:

Reference:

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Work Order ID 53278

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Item ID: D206-667-103BL

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Cust Item ID:

Required Date: 09/11/2009 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150 HandFXtube Hand Finishing Crosstubes	Crosstubes Chemical Conversion Memo	0.00 0.00				(1X)	2	MB 09-11-17	
160 QC Quality Control	QC3- Inspect Part Finish Memo	0.00 0.00		2) Sorluliz		(X2)	0		
170 QC Quality Control	QC5- Inspect part completeness to step on W/O Memo	0.00 0.00		2) Sorluliz		(40)	0		

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Item ID: D206-667-103BL

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Item Name: Crosstube Fwd, Blue

Start Date: 29/10/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 09/11/2009 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
180 Outsource2	Outsource process - NDT per QS1038 4.1 Memo CROSSTUBES	0.00 0.00	P10: 107u			CZ	09/11/18	①	
190 Packaging	Packaging Memo Ensure copy of NDT results attached to work order.	0.00 0.00				P 09/11/18			
200 QC	QC5- Inspect part completeness to step on W/O Memo Quality Control	0.00 0.00				m 09 11 18 ①			

Work Order ID 53278

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Item Name: Crosstube Fwd, Blue

Start Date: 29/10/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 09/11/2009 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
210		0.00							
	SprayPaint					<u>MA</u>	<u>09</u>	<u>11</u>	<u>18</u> (1)
SprayPaint	Memo	0.00							
Spray Painting	PRIME GREY B110918								
	SPRAY PAINT DELFLEET BLUE B113171								
	CLEAR DELFLEET B110896								
220		0.00							
	QC14- Inspect Spray Paint								
QC	Memo	0.00							
Quality Control	INSPECT SPRAY PAINT								
						<u>BT</u>	<u>09</u>	<u>11</u>	<u>19</u>

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Item ID: D206-667-103BL

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Item Name: Crosstube Fwd, Blue

Start Date: 29/10/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 09/11/2009 Req'd Qty: 1.00

Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
230	Crosstubes	0.00				ml	09	11	25 ①
Crosstubes	Memo	0.00							
Crosstubes	1-Install support using 0.03" to 0.06" thick layer of magnobond 6398 per QSI 015. Let cure for 12h after installation and prior to packaging. Note (2) Aft holes should be facing up. A/R Magnobond 6398: 112417 exp: 01/2011								⇒ ml 09 11 26 ①
	2-Install supports and clamps as per Dwg D206-667-143. Torque clamps to 80-100 in lb								⇒ ml 09 11 25 ①
	3-Install nut plates as per Dwg D206-667-143. Touch-up rivet heads with Imron paint.								
240	QC5- Inspect part completeness to step on W/O	0.00							
QC	Memo	0.00							② /
Quality Control									

Rubber Cushion:

D3595-063-395 B:44667 x4 ml 09 11 26

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Cust Item ID:

Required Date: 09/11/2009 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	----------------	--------------	--------------	---------------	---------------	------------------	----------------

250

Pick Kit

0.00



Packaging

Memo

0.00

Packaging

Per 10/27

260

QC4- 100% Inspect kits for completeness

0.00



QC

Memo

0.00

Quality Control

1 *10/11/27*

270

Packaging

0.00



Packaging

Memo

0.00

Packaging

Identify and pack for shipping as per PPP D206-667-103

Location: _____

PPP Rev: _____

Per 10/27

Work Order ID 53278

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Item ID: D206-667-103BL

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Setup Start



Revision ID:

Stop



Item Name: Crosstube Fwd, Blue

Start Date: 29/10/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 09/11/2009 Req'd Qty: 1.00



Customer:

Reference:

Run Start




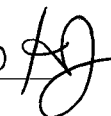
Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
280	QC21- Final Inspection - Work Order Release	0.00							
									
QC	Memo	0.00							
Quality Control									

09/11/30 R0911-27
①

Picklist Print

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Work Order ID: 53278



Parent Item: D206-667-103BL



Parent Item Name: Crosstube Fwd, Blue

Start Date: 29/10/2009

Required Date: 09/11/2009

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	--------------------------	---------------	----------------	--------

AN5-30A		Purchased	No				Each	107.0000	4.0000			
BOLT												

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST

107

110467

57

112933

50

M110467

AN5-32A		Purchased	No				Each	147.0000	4.0000			
Bolt												

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST

147

106242

3

106519

4

110363

17

112082

23

112805

50

112933

50

M112805

Picklist Print

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Work Order ID: 53278



Parent Item: D206-667-103BL



Parent Item Name: Crosstube Fwd, Blue

Start Date: 29/10/2009

Required Date: 09/11/2009

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	--------------------------	---------------	----------------	--------

AN5-7A

Purchased

No

Each

110.0000

10.0000



Bolt

Handwritten signature: R. S. 11/12/09

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

ST

60

110625

7

111668

3

112612

50

Main Warehouse

t

50

112829

50

Handwritten: 11/12/09

Picklist Print

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Work Order ID: 53278



Parent Item: D206-667-103BL



Parent Item Name: Crosstube Fwd, Blue


Start Date: 29/10/2009

Required Date: 09/11/2009

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
AN960JD516  Washer		Purchased	No				Each	1,560.000	18.0000 ✓			

9/11/27 ①

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
ST	1560	
100564	2	
106167	6	
107534	34	
107959	43	
108246	46	
108672	2	
109059	49	
109752	22	
110363	46	
110523	57	
111279	39	
112082	68	
112314	500	
112794	146	
112828	500	

M112F28

Picklist Print

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Work Order ID: 53278

Parent Item: D206-667-103BL

Parent Item Name: Crosstube Fwd, Blue


Start Date: 29/10/2009

Required Date: 09/11/2009

Start Qty: 1.00

Required Qty: 1.00

Comments:

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
AN970-4  Washer		Purchased	No				Each	443.0000	12.0000			

9/11/27

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
ST	443	
104885	3	
107242	3	
107715	1	
108077	2	
108377	19	
111724	3	
112082	5	
112794	9	
112933	98	
112991	300	

11/29/1

D206-667-103TRNRevC

Manufactured No



Crosstube Turning DetailL

2.0000 1.0000

53410 MB 09-11-16

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
FG	2	
52829	1	
52830	1	

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Shop Packet Print

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Picklist Print

Page 5

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Work Order ID: 53278

Parent Item: D206-667-103BL

Parent Item Name: Crosstube Fwd, Blue

Start Date: 29/10/2009

Required Date: 09/11/2009

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	--------------------------	---------------	----------------	--------

D2873-043RevA Manufactured No

Each 41.0000 2.0000



Nut Plate Assembly

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST

41

45370

6

45422

15

50002

20

D2873-045RevA Manufactured No

Each 59.0000 2.0000



Nut Plate Assembly

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST

59

45210

3

46772

16

50001

40

ml 09 11 25

ml 09 11 25

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Shop Packet Print

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Picklist Print

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Work Order ID: 53278



Parent Item: D206-667-103BL



Parent Item Name: Crosstube Fwd, Blue

Start Date: 29/10/2009

Required Date: 09/11/2009

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D2891-1RevA1		Manufactured	No				Each	73.0000	2.0000			

2.25 Support

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

ST

73

40336

1

40198

8

43880

20

45935

4

46159

20

50952

20

ML 09 11 25

BLUE

MS20601-AD4W8

Purchased

No

Each

300.0000

14.0000



RIVET

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

ST

300

108521

100

112203

200

ML 09 11 25

Picklist Print

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Work Order ID: 53278

Parent Item: D206-667-103BL

Parent Item Name: Crosstube Fwd, Blue


Start Date: 29/10/2009

Required Date: 09/11/2009

Start Qty: 1.00

Required Qty: 1.00

Comments:

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
MS21042L5  Nut		Purchased	No				Each	1,060.000	4.0000			

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST

1060

110382

10

111127

4

111636

46

112314

1000

m/12319

MS21920-20

Purchased

No



Clamp (per MIL-DTL-8783C)

Each

151.3000

4.0000



Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

ST

151.3

103478

2

106484

12

109269

9.3

110536

10

111281

18

112307

50

112624

39

112793

11

m/09 11 25

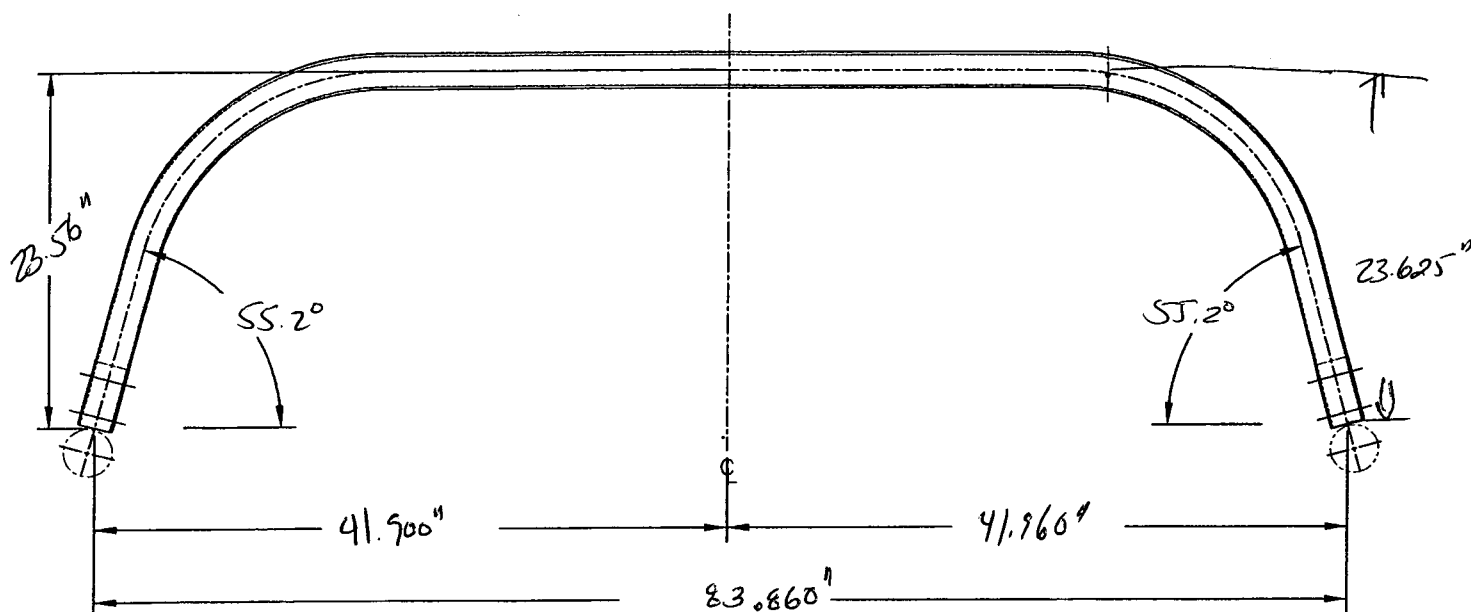
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Shop Packet Print

Page 7

DART AEROSPACE LTD		Work Order:	53278
Description: Crosstube High Fwd (206L)		Part Number:	D206-667-103
Inspection Dwg: D206-667-143 Rev: C		Page 1 of 1	

Required Dimension	Min	Max
Height	23.39	23.65
1/2 Span	41.79	42.05
Angle	54	56
Total Span	83.58	84.10



Comments
* Drill holes so they are even even both sides

QC15 Inspection	<i>S</i>
Date	09/10/16

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	
B	09.06.26	Dimensions updated per Dwg Rev C	KJ	
C	09.10.22	Minimum height dimension revised	KJ	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Item	Qty -143	Part Number	Description
1	X	D206-667-143	CROSSTUBE ASSEMBLY (206L HIGH FWD)
2	1	D6002-115	CROSSTUBE
3	2	D2873-043	NUT PLATE
4	2	D2873-045	NUT PLATE
5	2	D2891-1	SUPPORT
6	4	D3595-063-395	RUBBER CUSHION
7	4	MS21920-20	CLAMP (OR MS21920-21)
8	14	MS20601AD4W8	RIVET (OR NAS9302B-4-8)
9	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 53278

PH 09-10-30

GENERAL NOTES:

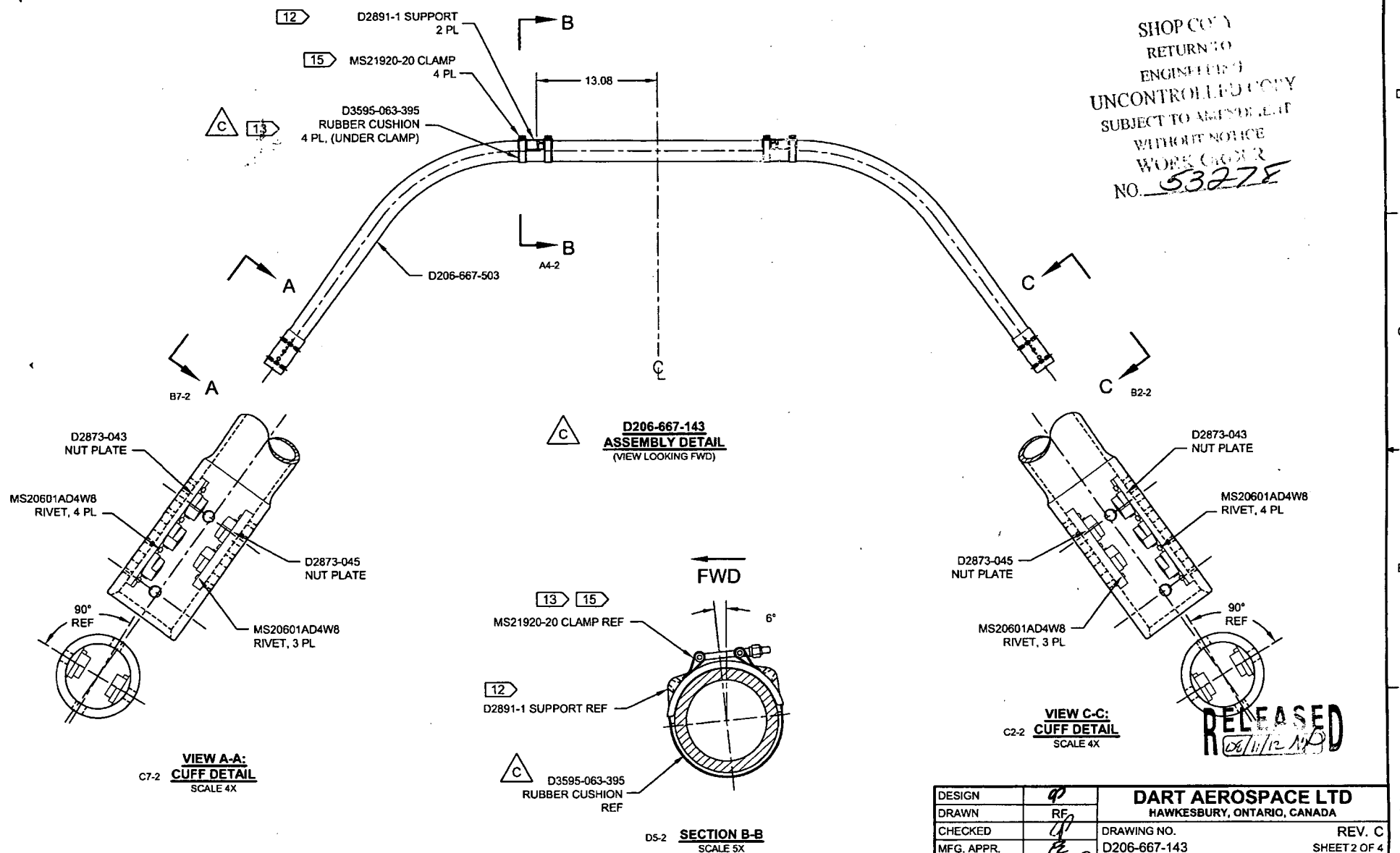
- 1) MATERIAL: MANUFACTURED FROM D6002-115
FINISHED LENGTH = 104.98±0.020
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER "D206-667-143" AND BATCH NUMBER ON INSIDE OF CUFF USING VIBRATING STYLUS.
- 7) WEIGHT: 15.5 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE.
- 9) RUN CUTTER OFF PART WHERE INDICATED. BLEND OUT EDGE LONGITUDINALLY. TRANSITION SHOULD BE SMOOTH.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 10 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- 11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 12) INSTALL D2891-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 13) INSTALL MS21920-20 CLAMPS (OR -21) WITH D3595-063-395 RUBBER CUSHIONS TO SECURE THE D2891-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMP MECHANISMS ARE LOCATED ON CROSSTUBE SUPPORTS.
- 14) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

RELEASED
08/11/06

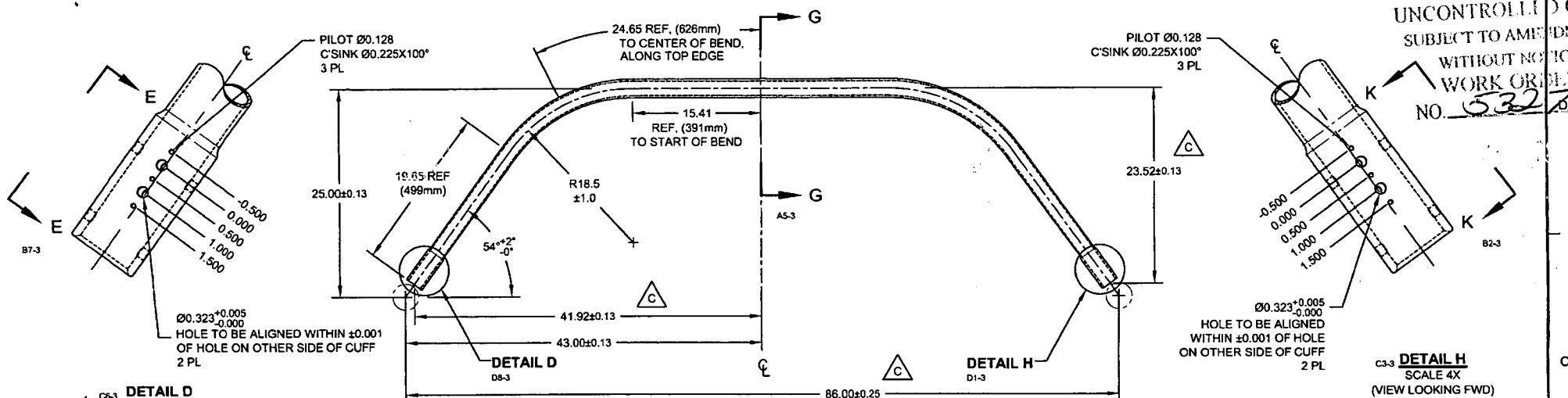
C	REVISE GENERAL NOTES/PART LIST (ZN D7-1); REORGANIZED VIEWS AND REFORMATTED DRAWING TO CURRENT STANDARDS. D3595-063-395 WAS D2856-400-694 (ZN D6-2 & A5-2); REMOVED REF. & ADD TOLERANCE (ZN D3-3, C4-3, C5-3); RELOCATED FLAG #6 (ZN A8-3) PER NCR 210; MOVED TURNING DETAIL & UPDATED TOLERANCE TO SHEET 4.	RF	08.11.06
B	ADD HOLES AND NUT PLATES FOR COMPATABILITY WITH BHT/AA SKUDTUBES	PH	05.07.26
A	NEW ISSUE	CP	00.11.17
REV.	DESCRIPTION	BY	DATE
DESIGN			
DRAWN	<i>RF</i>		
CHECKED	<i>RF</i>		
MFG. APPR.	<i>RF</i>		
APPROVED	<i>RF</i>		
DE APPR.	<i>RF</i>		
DATE	08.11.06		

DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWING NO. D206-667-143	REV. C SHEET 1 OF 4
TITLE CROSSTUBE ASSY (206L HIGH FWD)	SCALE NTS
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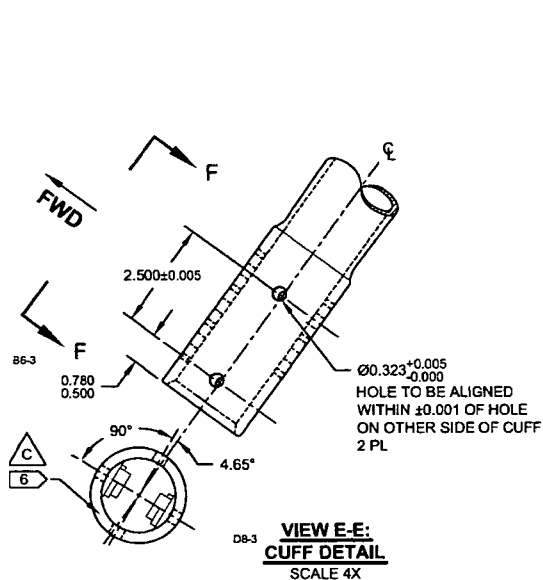
SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 5327E



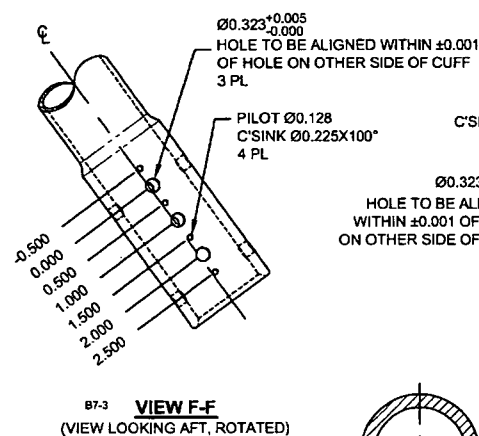
DESIGN	90	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	RF	DRAWING NO.	REV. C
MFG. APPR.	RF	D206-667-143	SHEET 2 OF 4
APPROVED	RF	TITLE	SCALE
DE APPR.	RF	CROSSTUBE ASSY (206L HIGH FWD)	NTS
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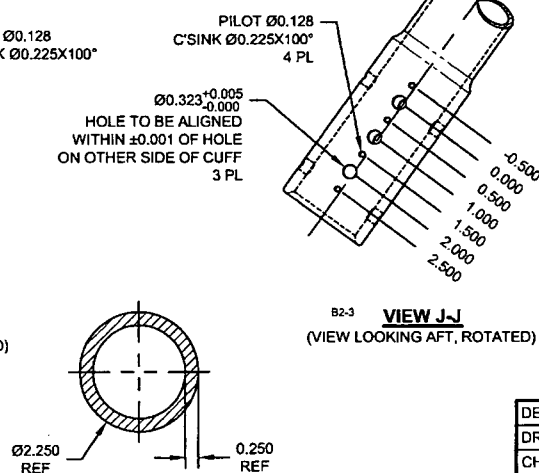
D206-667-503
BENDING AND DRILLING DETAIL
(VIEW LOOKING FWD)



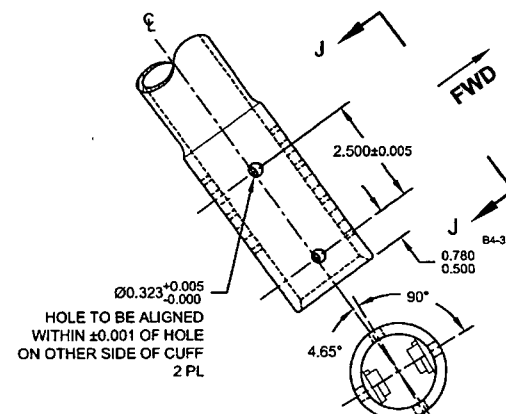
VIEW E-E:
CUFF DETAIL
SCALE 4X



B7-3 VIEW F-F
(VIEW LOOKING AFT. ROTATED)



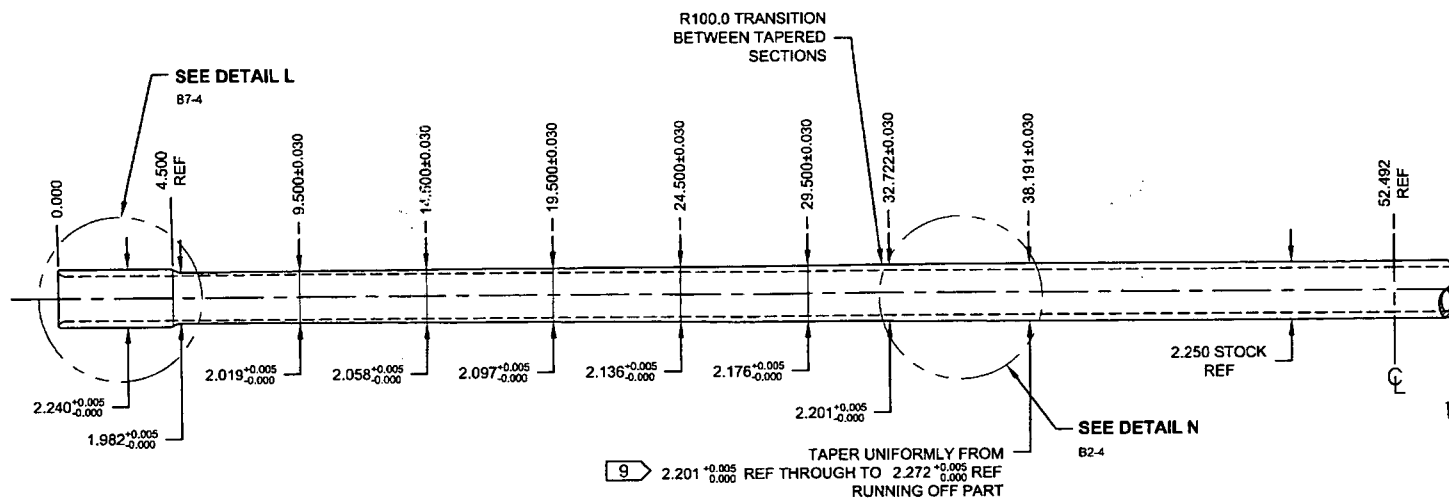
B2-3 **VIEW J-J**
(VIEW LOOKING AFT, ROTATED)



D1-3 **VIEW K-K:**
CUFF DETAIL
SCALE 4X

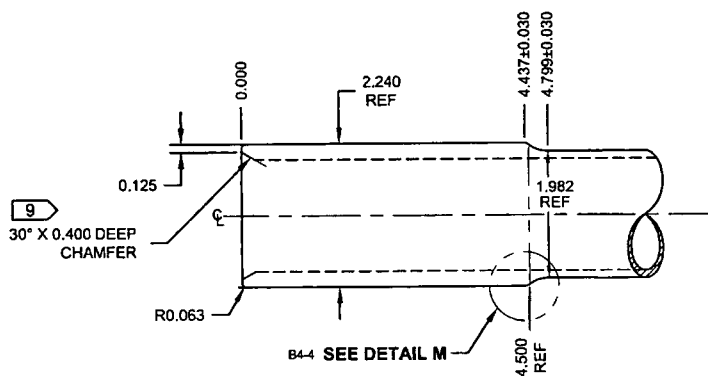
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DESIGN	<i>Q</i>	DART AEROSPACE LTD	
DRAWN	<i>RF</i>	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>Q</i>	DRAWING NO.	REV. 0
MFG. APPR.	<i>E</i>	D206-667-143	SHEET 3 OF 3
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	CROSSTUBE ASSY (206L HIGH FWD)	NT
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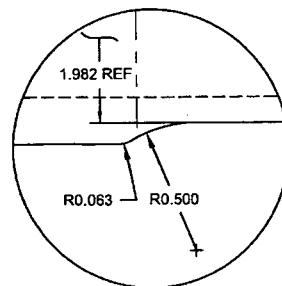


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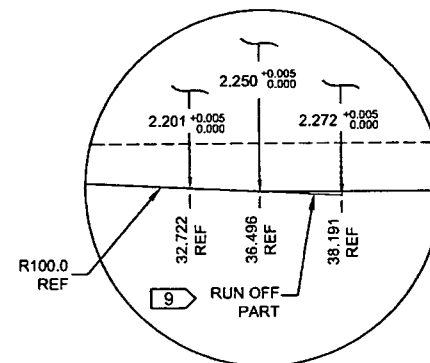
C TURNING DETAIL



**DETAIL L:
CROSSTUBE CUFF**
07-4
NOT TO SCALE



**DETAIL M:
CUFF TRANSITION**
A6-4
NOT TO SCALE



**DETAIL N:
TAPER RUN-OFF**
C4-4
NOT TO SCALE

RELEASED
08/11/06

DESIGN	9	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	9	DRAWING NO.	REV. C
MFG. APPR.	9	D206-667-143	SHEET 4 OF 4
APPROVED	9	TITLE	SCALE
DE APPR.	9	CROSSTUBE ASS'Y (206L HIGH FWD)	NTS
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LIQUID PENETRANT TEST REPORT

P- 15309

CLIENT	<u>DART Aerospace</u>	DATE	<u>Nov. 18-2009</u>	PAGE	<u>1</u>	OF	<u>1</u>
ATTENTION	<u>LINDA/CHANTEL</u>	ACUREN JOB NO.	<u>188-09-0933</u>	TIME	AM <input checked="" type="checkbox"/>	PM <input type="checkbox"/>	
ADDRESS	<u>1270 ABERDEEN ST.</u>	PO/NO.	<u>- 10791</u>				
	<u>HAWKES BURY ON. K6H 1K7</u>	WORK LOCATION	<u>SAME</u>				
		ACCEPTANCE STD.	<u>ASTM 1417</u>	REV./DATE	<u>2007</u>		
PROJECT	<u>F. P. I. ON CROSS TUBES</u>						
ITEM(S) EXAMINED	<u>4 UNITS</u>						

JOB DESCRIPTION	PROCEDURE NO. <u>LT-0002</u>	REV./DATE	TECHNIQUE NO. <u>LT-CH 2</u>	REV./DATE
PART NO.	MATERIAL <u>ALUMINE ALUMINUM</u>	THICKNESS		
SCOPE	<u>WET FLUORESCENT LIQUID PENETRANT INSPECTION</u> <u>CARRIED OUT 100% EXTERNAL</u>			

TEST DETAILS	
METHOD <input checked="" type="checkbox"/> FLUORESCENT <input type="checkbox"/> VISIBLE	<input checked="" type="checkbox"/> WATER WASH <input type="checkbox"/> SOLVENT REMOVABLE <input type="checkbox"/> POST EMULSIFIED
FAMILY BRAND <u>MAGNA FLUX</u>	BLACK LIGHT S/N <u>16459</u> <input type="checkbox"/> OUTPUT > 1000 μ W/cm ² <input type="checkbox"/> AMBIENT < 2 fc
PENETRANT <u>ZL 67</u> MINIMUM DWELL TIME <u>45</u> MIN.	LIGHTING EQUIP. <input type="checkbox"/> FLASHLIGHT <input type="checkbox"/> TROUBLELIGHT <input type="checkbox"/> OUTPUT > 100 fc @ SURFACE
PENETRANT REMOVER <u>H2O</u> MINIMUM DRY TIME <u>>10</u> MIN.	OTHER <u>LABINO</u>
DEVELOPER <u>SKD 52</u> MINIMUM DWELL TIME <u>10</u> MIN.	LIGHT METER S/N
DEVELOPER TYPE <input checked="" type="checkbox"/> NON AQUEOUS <input type="checkbox"/> AQUEOUS <input type="checkbox"/> DRY	CAL DUE DATE <u>DEC. 8-2009</u>

TEST SURFACE	
SURFACE CONDITION <input type="checkbox"/> AS GROUND <input type="checkbox"/> AS WELDED <input checked="" type="checkbox"/> MACHINED <input type="checkbox"/> SHOT BLASTED <input type="checkbox"/> CLEAN BARE METAL	
SURFACE TEMPERATURE <input type="checkbox"/> < -4°C/ 20°F <input type="checkbox"/> -4°C/ 20°F TO 10°C/50°F <input checked="" type="checkbox"/> 10°C/50°F TO 52°C/125°F <input type="checkbox"/> > 52°C/125°F	

RESULTS- <input type="checkbox"/> METRIC <input type="checkbox"/> IMPERIAL	
<u>1 - CROSS TUBE - W.O. 53275</u> ✓ <u>1 - CROSS TUBE - W.O. 53276</u> ✓ <u>1 - CROSS TUBE - W.O. 53277</u> ✓ <u>1 - CROSS TUBE - W.O. 53278</u> ✓	<u>09 11 18</u>

Scope of Services
The agreement of Acuren Group Inc. to perform services extends only to those services provided for in writing. Under no circumstances shall such services extend beyond the performance of the requested services. It is expressly understood that all descriptions, comments and expressions of opinion reflect the opinions or observations of Acuren Group Inc. based on information and assumptions supplied by the owner/operator and are not intended nor can they be construed as representations or warranties. Acuren Group Inc. is not assuming any responsibilities of the owner/operator and the owner/operator retains complete responsibility for the engineering, manufacture, repair and use decisions as a result of the data or other information provided by Acuren Group Inc. In no event shall Acuren Group Inc.'s liability in respect of the services referred to herein exceed the amount paid for such services.

Standard of Care
In performing the services provided, Acuren Group Inc. uses the degree, care and skill ordinarily exercised under similar circumstances by others performing such services in the same or similar locality. No other warranty, expressed or implied, is made or intended by Acuren Group Inc.

SIGNATURES		DTR # <u>E-27852</u>
CLIENT REPRESENTATIVE <u>Sam Titley</u>	TECHNICIAN (SIGNATURE) <u>Mike Johnston</u>	REPORT REVIEWED BY:
NAME (PRINT): <u>Sam Titley</u>	NAME (PRINT): <u>Mike Johnston</u>	NAME INITIALS
CGSB LEVEL <u>II</u> SNT LEVEL <u>II</u> CGSB REG. NO. <u>6066</u>	CGSB LEVEL <u>II</u> SNT LEVEL <u>II</u> CGSB REG. NO. <u>6066</u>	

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